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A
TREATISE
O F
FEAVERS,

In which is Contain'd,
A DESCRIPTION
Of the Nature of
Fermentation;
TOGETHER,
With the Causes, Symptoms,
, and Cures of all
FEAVERS.

*Written Originally in Latin, by the
Author of Riverius Reformatus.*

Calmette (Francis)
London Printed, and Sold by E. Baldwin,
at the Oxford-Arms in Warwick-Lane, 1701.

Calmette

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THE
Translator's
PREFACE
TO THE
READER.

THE Author of this Treatise having Collected into one Volume an accurate and exact Description of all the Diseases incident to Humane Bodies, has thought fit to imitate Riverius's method of Practice as near as possibly he could, and therefore gave to his Book the Title

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The Translator's

of Riverius Reformatus; but in the theoretical enquiry into the Causes of Distempers follows the Modern Hypotheses, which our late Discoveries of Anatomy and Chymistry have introduc'd: For tho' the Ancients were very Diligent and Faithful in observing all the various Symptoms and Periods of Diseases, and tho' their Experience and Success in Curing the same were so Remarkable, that their Writings to this Day do serve for a Model and Standard of our Modern Practice; yet their Ignorance of the Circulation of the Blood, and several other things relating

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ting to the *Oeconomia Animalis*, occasion'd many mistakes in explaining the Causes of Diseases ; which our Author has effectually amended, in Chaining together the Discoveries of the later, and Experience of former Ages ; presenting us at one view both with the Improvements that of late Years have been made in Physick, and with the applauded Methods of Cure that are built upon the Experiences and Observations of the Ancients : So that the Modern Suppositions he lays down are so far from overturning the Ancient Practice, that they serve rather to unfold the reasons

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reasons of the Phænomena, Symptoms, and Cures, observ'd and perform'd by them, without any other Guide but blind Experience.

This small Treatise of Feavers makes in Bulk but an inconsiderable part of the Book; but for its fulness, accuracy, and conciseness may vie with any of its Fellow-companions; for so much as it contains in so few Pages all the Doctrine of Fermentation in General (which Willis and several other Authors have spent so many Chapters upon; and which is a necessary Antecedent to the Description of Feavers, since they all

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all depend upon, nay rather consist in, a Fermentation) and an accurate enquiry into the Causes of Feavers, of which so many Hypotheses have been form'd ; together with a Circumstantial Account of the Symptoms, Signs, Periods, and Degrees of the same ; All which is follow'd by the Indications of Cure, which are plainly and rationally deduc'd and inferr'd from the Hypothesis which is here advanc'd. The Forms of Prescription, our Author has thought fit to omit, by reason that they are so common and to be met with every where ; and that the only difficulty or business of a Physician con-

The Translator's Preface.

*consists in a distinct Per-
ception of the general Indicati-
ons.*

*To Conclude, The Entertain-
ment that this and all the other
Writings of our Learned and
Ingenious Author have found
beyond Sea, do encourage me to
hope that it shall meet with the
like Reception from our English
World.*

A

TREATISE OF FEAVERS.

SEEING that all Feavers, of what Nature soever, are accompany'd with a Fermentation in the Mass of the Blood; and that the Physicians of this present Age have Exploded that Antiquated Notion of a Feaver's being a preternatural heat kindled in the Heart, and from thence distributed through the Arteries to all the parts of the Body; and in Lieu of the same, have embrac'd the Opinion of its being a *Fermentative*

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tative and *Intestine* Motion of the parts of the Blood: I thought it not Improper, before I commence the Description of the Natures, Differences, and Causes of Feavers, to premise somewhat of *Fermentation* in General; which, if rightly understood, shall contribute not a little to the clearer understanding of this Treatise. The word *Fermentation* then is deriv'd from the *Ferment*, which, for the most part, causes or rather occasions only gives Rise to this Motion; or from the Effervency and Heat which is most frequently observ'd in Fermented Bodies. Of old it was only attributed to such compound Bodies, as by the Addition and Commixtion of a Ferment, or the like, did swell and puff up, and thus beget an Intrinfecal Motion in their inward parts, as it happens in Paste or Dough, in Beer and Spirituous Juices, whether of the Vine

Vine, or others that by Distillation yield hot and ardent Spirits ; which of their own accord, without the Intervening of any Extrinsic Body, use to rise up, and undergo a Motion of their parts, such as Must, Syder and other Liquors express'd from Fruits and Spirituous Plants. But now its signification is become more universal, extending it self not only to Dough, Must, Ale, Beer, and such like, but to several other things ; insomuch that amongst our modern Physicians there is no Motion at least of humid Bodies in all the threefold Regnum, whether Mineral, Vegetable or Animal, that is not entitl'd a *Fermentation* ; all which I cannot but approve of, by reason of that Similitude and Analogy which the intestine Motion of the Humours and Juices, lock'd up in Plants, Animals, and the Bowels of the Earth, bears to the Fermentation of Paste, Must, and Beer.

But that I may confine my Discourse to the Motion of the Blood, and other Humours contain'd in Humane Bodies ; that, being a more proper Subject for our present purpose; I hope no Man in his right Wits will have the Impudence to deny, that the Natural Heat which Man, and all other Living Creatures, are equally Possess'd of, do's depend upon the Circulating, but more especially the Fermentative, Motion of the Blood ; without which the Constituent Elements of Blood, being Heterogeneous and of different Natures, would unlock the bonds of their Mixture, separating mutually from one another, as we see they do in Blood let forth from the Veins. And indeed, being that many Philosophers have justly determin'd the Nature of Heat, to consist in the Motion of the Particles contain'd in its Subject ; and that all Fermented Bodies,

Bodies, especially such as are copiously Impregnated with Spirit, Oil, or Sulphur, are in a continual Heat; it is highly reasonable that the Blood of Animals, which is always Hot, and receives Augmentation of Heat in proportion to the encrease of its intestine Motion, should owe the Original of this its Natural Heat to no other cause, than that of the Mutual Strife and Justling, or Fermentation of its Elementary Particles. For as there be in Dough, Must and Beer, several Heterogeneous and Disproportionate Particles, which dispose 'em for Fermentation; in like manner the Chymical Resolution of the Blood discovers to us several Elementary Principles, which are Spirit, Salt, Sulphur, Water, and Earth; whose different and disagreeable Figures are apt to produce the like Effect in it.

But to prevent all Obscurity, before I proceed further, I shall here explain the Nature of Fermentation, which may be defin'd to be *An Intestine and Expansive Motion of the Heterogeneous and Disproportionate Parts of a Humid Body, in a free and unconfined Space, without the accession of any external Sensible Cause, producing either a total or partial Change and Alteration of the Fermented Body.* This Definition seems to me, to be as accurate and exact as any can be given, as I shall make to appear by a circumstantiate and particular Explication of every word contain'd in the same: And first of all, I define it to be, *An Intestine and Expansive Motion*: The Motion is Obvious to our Senses in several Fermented Bodies, such as Dough, new Wine, &c. Sometimes indeed when the Fermentation is weak and fainter, the motion is not so sensible

ble, but may be easily gather'd and inferr'd from the change of Colour, and other alterations procur'd in the Subject; and in this it agrees with all other Motions that are not Fermentative, such as the moving of Water, Wine, &c. by the external force of the Hand; or the motion of running Waters, and the like. This *Motion* is said to be *Intestine and Expansive*, because it is produc'd in the Centre or Bowels of its Subject, from whence the Intrinsick Particles seem to move and stretch themselves towards the Circumference, causing it to swell, and become turgid; which quality is not to be found in the other Motions of Humid Bodies. In the next place it is said to be a *Motion of the Heterogeneous and disproportionate Parts*; giving us to understand that all manner of Heterogeneity and Different Figuration of parts is not

necessary for Fermentation, only
 such as is accompanied with a great
 Irregularity and Disproportion a-
 mong its parts ; or (as I shall
 have occasion to observe anon)
 such a Constitution of parts as af-
 fords and easie and dis-encumber'd
 entrance to the subtil ethereal mat-
 ter, but a difficult and uneasy Re-
 treat. For were it not so, all sorts
 of Liquors, whose parts being of
 different Magnitudes and Forms,
 are Essentially in Motion, might
 justly Challenge to themselves the
 Title of *Fermentation*, which all
 the World must own to be absurd.
 Hence 'tis that such Bodies as
 are endu'd with a similitude and
 uniformity of parts (that is, such
 particles as in their shapes and forms
 do mutually resemble and agree
 with one another) do continue
 quiet and undisturb'd in the same
 lasting State and Condition ; where-
 as were a Disproportion advanc'd by
 adding

adding particles of different Natures, as for example, *Spirit of Wine* to *Spirit of Turpentine*; or *Oyl of Vitriol* to *Oyl of Tartar*, presently there arises an Effervescency and Fermentation, introducing several alterations. 'Tis added moreover, of a *Humid Body*, by reason that Fermentation properly belongs to Humid Bodies, or at least to such as in some measure participate of Humidity or moistness; for tho' Leaven of Bread, Triacle, and such like things of a thicker consistency, seem to possess but a small share of Humidity; yet they are not so dry or compact as not to retain so much moistness as makes 'em soft and pliable; upon the account of which they are justly said to be Fermented, or to swell and heave up by virtue of an Intrinsic Motion in their inward parts. From whence we infer that dry, hard, and compacted Bodies are not qualified

lified for undergoing a Fermentation; which is likewise attested by Experience it self, for their parts being strictly united one to another in a quiet and restful Peace, are free from those Strifes and Jarrs that in moist and softer Bodies, (where the System of the Parts, is loose and disengaged) provoke one another to mutual and reciprocal Motions. The words that come next in order, are, *in a free and unconfined Space*, by reason that 'tis impossible a Fermentative Motion should succeed without sufficient Place and room left for the swelling and rising up of the Fermented Body; for where a Body is rarified (as all Fermented Bodies are) and gives entrance and admission to new matter from without; there must necessarily ensue an encrease of extension, which consequently requires a larger and more capacious space. And 'tis by Vertue of this deficiency
of

of place that Casks, when filled with Newprest-wine or Must, stopp'd close, do burst asunder ; or that Earthen and Glass Vessels are broken into pieces, when the Liquors too plentifully contain'd in 'em, are assaulted by a Violent Boyling and Fermentation ; nay, and to the same very cause is owing the breaking of the Blood Vessels in Plethorick Feavers. But if the walls and sides of the Vessels containing such Liquors, be so strong as to surmount the shock of the Fermented Liquors, then the Fermentation becomes very weak and slow-pac'd ; nay, scarce any at all. Next follows, *Without the accession of any external Sensible Cause* ; which words distinguish a Fermentative Motion from that of Burning and Boyling ; for Boyling Water and Burn'd Wood are not properly said to be Fermented, nor yet such Liquors as are agitated and mov'd
by

by the Gales of the Circumambient Air ; because that all such Motions are owing to sensible Causes, the Fire, Air, &c. whose external impulses give rise to the different Agitations and Commotions of these Bodies. The last words of the Definition (which are, *Producing either a total or partial Change and Alteration of the Fermented Body*) serve to signify that the end of Fermentation consists in changing the Fermented Body, into something different from what it was before : And this change is either total and perfect as in Generation and Corruption of Bodies, where all the parts receive from Fermentation a new Situation or Order, and new Shapes or Figures ; insomuch that the whole compound seems to be moulded afresh, and cloathed with a new Form : or only partial and imperfect, as when the Fermentative Motion do's not so much confuse

confuse and disorder the Particles, or rob 'em wholly of their former Shapes, but leaves to the Body somewhat of its Ancient Form, and Superficial Appearance ; in which Sense Bodies are said to be Altered, not Generated or Corrupted.

Having thus explain'd the Nature of Fermentation, our next task shall be to pry into its different Kinds. And first of all, with respect to the different degrees of the Fermentative Motion, it is divided into *Effervescency*, and a *Fermentation* properly so call'd. *Effervescency* is when the Particles of the Fermented Body are so rapidly mov'd and toss'd to and again, that their Tumultuous Agitation is both heard by the Ears, and visible to the Eyes ; when like boyling Water they rise and swell up, throwing out Fumes and Vapours ; and for the most part are hot to a high

high and intense degree. *Chymistry* furnishes an infinity of Examples of this Nature, whether in the mixture of contrary and opposite Liquors or Spirits ; as *Spirit of Vitriol* with *Oil of Tartar* ; and *Spirit of Turpentine* with *Spirit of Wine*, in a word, an *Acidum* with an *Alkali* ; or in the Dissolutions of Stones and Metals ; which, being hard and solid, cannot be Fermented of themselves, as was remark'd but now ; but when an acid or corrosive Liquor is pour'd upon 'em, the disproportion and disagreement of the surface of the Stone or Metal with the Particles of the Liquor immediately grating upon it, causes such a forcible and impetuous concussion, as pulls asunder and separates the parts of the solid Body one from another, till at length the whole be divided and dissolv'd into such minute small Particles as can hide themselves.

selves without Disturbance in the pores of the Dissolving Liquor ; and thus being agreeably Proportionated one to another, they make an end of their Strife and Effervescency. The other *Species* of Fermentation, which is opposite to Effervescency, retains the Name of its *Genus*, and is said to be such when the Motion and Agitation of the Particles of the Fermented Body is more moderate ; when the Fumes and Steams are not exhal'd so copiously, and the whole obtains a remissive degree of Heat ; as is exemplified in Paste, Must, new Beer, and all other Bodies that Ferment after a meek and gentle manner.

In like manner, as to the Subjects in which *Fermentation* is rais'd, it is divided into *Natural* and *Artificial* : The *Natural* is a *Fermentation* in which the help of Artificers or the assistance of Art is not at all requir'd or made use of ; but

but the whole work is absolved by Nature it self; such as we see in the Juices of Vegetables, and the Principles of Minerals lock'd up in the Bowels of the Earth; and in the Blood and other Humours of Animals, which needfully undergo a Fermentation for performing the Animal Functions of Nourishment, Generation, maintaining the Natural Heat, &c. The *Artificial* is such as is procur'd by the Preparation of Art, especially by mingling different Bodies together, and applying actives to passives, after the manner of the Chymical Preparations and Experiments.

The *Natural Fermentation* is subdivided into that which is *perfective*, when the Fermented Body is Meliorated and Perfited by the Fermentation; and that which is *Corruptive*, when it decays and suffers by Fermentation. But indeed, seeing that the Generation of one thing is

is the Corruption of another, this Division cannot be of any great moment. Which is likewise to be said of all the other accidental Divisions taken from the length or shortness of its duration, or the difference of its subject, whether Mineral, Vegetable or Animal.

As to the causes of *Fermentation*, we meet with many different Opinions of the many Authors that have wrote upon that head. Some think the Fermentative Motion is rais'd from within (without the accession of any extrinsecal cause) by the agility and nimbleness of the Spirits, which being the more subtil and active Principle of the Body, endeavour to disengage themselves and fly away ; which can never be attempted without the agitation and commotion of the thicker and grosser parts, in which they are entangled ; and this stir or tumult, say they, receives Augmentation
or

or decrease in Proportion to the greater or lesser Numbers of Spirits that occasion it. Those who hold Water, Air, Earth, and Fire to be the Elements or first Principles of Bodies, affirm the Particles of the Fire that lie hid in every compound Body to be the cause of Fermentation ; so that they reason of the Fire, and its Operations much after the same manner, that the Chymists do of their Spirits ; many of 'em imagine that those Bodies we call *Alkalies*, which are reverberated with Fire and Heat, contain an infinite number of fiery Corpuscles imprisoned within their Pores, that upon the least occasion of Releasement spring out with an impetuous force, by virtue of their volatile and active Nature. Hence, say they, Water pour'd upon Limestone, makes a tumultuous Motion, and Liquors pour'd upon Calcinated Metals or Stones,

Stones, raise a visible Fermentation. Others alledge, that the Fermentative Motion is caus'd by the reciprocal action and strife of an Alkali and an Acid ; both which, they say, are to be found in all Bodies. They took occasion to frame this Hypothesis from the Artificial Effervescencies which the Chymists present 'em with, by mixing an Acid with an Alkali. They define an *Acid* to be a Body endowed with long pointed Particles, such as grate strongly upon the Organ of Taste, and sink deepest into its Pores, as the Juice of Limons, Spirit of Vitriol, Wine, &c. But an *Alkali*, say they, is a Body which being Calcinated by Fire or Heat, becomes all over porose and spongy, by the passing and repassing of these fiery Corpuscles through its substance, and thus is fitted for absorbing or sucking up the sharp-pointed Particles of the Acid, and lodging

lodging them within its own pores ; but this cannot be perform'd without a Fermentation or Tumult in its parts, which, according to them, proceeds from the penetrative quality of the Acid that drives in its pointed Particles, like so many wedges, into the substance of the Alkaline Body, endeavouring to cleave and separate its parts one from another, till at length in the progress of time either the Alkali be totally dissolv'd, or the Acid by being entangl'd and imprison'd within its Pores be obliged to surcease the motion.

But there is yet another Sect of Philosophising Wits, that enquire into the matter more narrowly, examining it by the Rules of Philosophy more than those of sense, whose opinion in this case I cannot but embrace and approve of. They are of opinion that the motion of fermented Bodies, tho' it seem to be raised from within ;

in ; that is, by their constituent Parts ; yet it is in it self truly adventitious, or is first of all excited by an External Cause, which is no other than what passes among the modern Philosophers, by the name of the subtil and ethereal matter ; the existence of which is sufficiently demonstrable both by reason and experiment ; and upon which God, the first Author of all Motion, hath confer'd, as an essential property, an extream swiftness and rapidity of motion, by Virtue whereof it penetrates and fills the Pores of all Bodies, and thus may justly be accounted the only cause of all sublunary motion, and by consequence of Fermentation, which it causes so often as any Body that affords to it an open and patent access into its Pores, denies it the like freedom or ease of retiring and disengaging it self of the same ; for then having the advantage of a wonder-

wonderful mobility as well as smallness of parts, it breaks through the gross resisting parts that obstruct its passage, and forces 'em back on all sides, from whence ensues a turgescenty and swelling up, which is observ'd to augment or decrease, in proportion to the greater or lesser numbers of ethereal particles that have crouded in, or to the greater or lesser resistance made by the grosser parts; but continues still, till such time as the ethereal matter have clear'd its way on all hands, and traced out a free passage for sallying out and in; upon which it surceases all agitation or division of the grosser parts, leaving 'em an undisturb'd Peace and Quiet, such as we see, not only in Bodies that never were Fermented, but even in those that have undergone the most strong and tumultuous Effervescency.

The Occasional Cause that prepares and disposes the fermented Bodies for a free reception and admission of a large and unusual quantity of ethereal matter, is that Heterogeneous Irregularity and Disproportion of parts, mention'd above ; which hinders a close and fit application or joyning of the parts one to another ; so that large chinks and passages are left for the ingress of the ethereal matter, which upon such an occasion throngs in very copiously. Hence it is, that all Ferments do raise a Fermentation in the Bodies they are mixed with, only by the disproportion'd figure and shape of their own Particles to those of the fermented Body ; and that Chymical Liquors, when mix'd together, do not ferment unless their Particles be of contrary and different forms, as in Acids and Alkalies which ferment and effervesce, only because

cause the constituent Particles of the one are not of such an agreeable Configuration as to cohere and cement with those of the other, without mutual Strifes and Jarrs. In fine, where-ever there is a sufficient Heterogeneity and Disproportion of the Parts, there necessarily ensues a turgescency or swelling upon the account, and in the manner already mention'd. For which cause it is, that in all Fermentations of the Blood we always accuse its Heterogeneous parts.

This last Hypothesis which attributes the whole work of Fermentation to the ethereal matter, as being the first, chief and efficient cause of the same, is most universally received amongst the wiser sort of Physicians, and seems indeed to be preferable to any that has been yet advanc'd ; for 'tis impossible that any Body whatsoever, tho' impregnated with Spirit and
fiery

fiery Particles, or tho' enfolded in its Womb the struggling twins of an Alkali and an Acid, can ever acquire or produce a greater motion than it has in it self; whether it be of its own accord, or by the addition of a ferment, or the application of actives to passives; since 'tis the constant and immutable Law of Nature, that all Bodies do persevere in the same state in which they are plac'd, unless justl'd out of it by some external agent: How is it possible then that a Ferment, which has no sensible motion in it, when added to Bread, Beer, and such like, that are as void of motion as it self, should cause such a stir and agitation, and produce such an intense heat, as they both partake of, when mutually fermented together? Or how can the Spirit of Vitriol, added to the Oil of Tartar, or Water pour'd upon Limestone, create such a tu-

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multuous Effervescency ; since they are all known Strangers to any sensible motion in their separate States ? Why should an Acid engag'd with an Alkaline Body, move more strongly than it did before ; or the Particles of *Fire* emprison'd in the Pores of calcinated Alkalies, and therefore in little or no agitation, stir up themselves all of a sudden, and perform such violent actions ? Or how can the Spirits that but now were entangled and dispossessed of their mobility, upon the approach of a *Fermentation*, disengage themselves, and put on their ancient mobility ? That Law of motion I mentioned but now, which is receiv'd and acknowledged by all Philosophers, puts it beyond all peradventure, that no colour of solution can be given to the difficulties here advanc'd, without the allegation of some very light and mobile matter arriving
from

from without, such as the ethereal matter, or the matter of the first Element, which throngs into their pores, in greater or lesser quantity, as the disposition and configuration of their parts and pores is more or less open and gaping; and having thus penetrated into, and divided their grosser parts, it tosses 'em up and down, sometimes very tumultuously, at other times but gently and with a meeker force.

In the mean while 'tis to be remark'd, that tho' we assert the ethereal matter to be the chief and principal cause of *Fermentative* motions, yet we do not exclude several other assisting causes, such as the *Elastick* parts of the Air, which enter the pores of the fermented Bodies, (they being already dilated by the ingress and motion of the ethereal particles) and contribute not a little to the division and separation of the grosser parts, by

blowing and puffing 'em up, till they rise in Bubbles, as Experience confirms. In like manner, the subtil and active Particles or Spirits of the fermenting Bodies, receive an encrease of motion from the ethereal matter (which is much more mobile than they) and thus do assist and succour the same in compassing its end. But I have already insinuated, that the effect or end of Fermentation is, that through the various agitations, separation and attenuation of the fermenting Body, its parts may obtain an uniform and proportionable nature, so that the subtil matter may have a free egress and regress on all sides; or that the gross resisting parts may be remov'd out of the way, either by Precipitation to the bottom, or by enlarging the Circumference of the fermented Body through an expansive motion, or by casting 'em quite

quite out of doors, if any patent way be found. The verity of all which is evident from that one instance of Must or New Wine. 'Tis likewise to be here remark'd, that in establishing the subtil matter for the cause of Fermentation, we deny not the efficacy of an Acid and Alkali mix'd together in advancing the same; for that we plainly see, by the Experiments of Chymistry, that where-ever they meet or rencounter one another, they forthwith become turgid, and ferment. But before I proceed to explain wherein this Efficacy consists, or how that turgescency ensues upon applying the one to the other, I think it not amiss to advertise my Reader, that the names of *Acid* and *Alkali* do not signifie an absolute but a relative Quality. For there could be no Fermentation rais'd betwixt the Acids and Alkalies of several kinds, if they

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were

were absolutely such ; for in that case there would be no Alkali at all. And in like manner no turgescent or swelling motion could follow upon the mixture of two or several Liquors, if neither of 'em. be absolutely Acid, such as Spirit of Turpentine, Wine, Urine, &c. All which is evidently false ; for Experience attests that there be several Acid Liquors, Heterogeneous and Disproportion'd to one another, which ferment upon a mutual approach ; and likewise that there be several sulphureous and sharp Liquors that ferment with one another : Nay moreover, that there be many other Bodies in which the taste cannot discern any thing, either of an Acid or an Alkali, that ferment when mix'd together, as ye may read in *De Graef's* Writings. All which do's sufficiently argue, that Acids and Alkalies are not said to be such abso-

absolutely in themselves, but with respect to the Bodies with which they use to ferment. Thus Water, which is not Acid in it self, may be said to be relatively such in respect of Limestone, and other calcinated Bodies ; and Spirit of Wine may be named an *Acid* in respect of Spirit of Urine, for as much as it performs the Office of an Acid. And in like manner among the Acid Liquors, which ferment with one another , one of 'em may be said to be an Alkali, for as much as it supplies the place of an *Alkali* : For all Bodies whatsoever that ferment with one another, tho' in taste they discover nothing resembling an Acid and Alkali ; yet in the mixture, situation, order and configuration of their Parts and Pores, have such a mutual relation and disproportion to one another, as is seen betwixt the real Acids and Alkalies, such as the Spirit of

Vitriol and Oil of Tartar, mix'd together ; so that 'tis nothing wonderful or extraordinary if such Bodies be said to effervesce, and ferment, after the same manner that Acids and Alkalies use to do. In Fine, all Effervescencies and Fermentations are solely owing to the Disproportion and Heterogeneity of the parts, as I have said already ; and hence we conclude, that as Acids and Alkalies, when mix'd and confus'd, are visibly seen and acknowledg'd to ferment ; so all other Bodies, of what nature soever, if accompany'd with such a Heterogeneous and Irregular Disposition of parts as may make way for the tumultuous ingress of the ethereal matter, are justly said to undergo the like Fermentation. And by this we are led to understand the various disposition of divers Alkalies and Acids for their relative Fermentations ; for though
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they all agree in general in being either Acids or Alkalies, yet they differ from one another in the particular conformation of their parts; as for example, there be Acids of several sorts, tho' all endow'd with pointed and sharp particles; some have Cylindrical, others Triangular, Quadrangular, or Pyramidal Parts; some are more or less pointed than others; some in the Form of a Needle, others in the Form of Spear; whence flow the different natures and actions of Spirit of Vitriol, Nitre, Sulphur, Salt, *Aqua Regalis*, distill'd Vinegar, Juice of Limons, Berberis, &c. All which agree in being Acid, but produce different Effects with respect to the different Configuration of the parts. Hence some of these Liquors dissolve Silver, some Iron, some Copper; others Gold; some Ferment with some peculiar Bodies, tho' not with all of an Alkaline nature;

some dissolve Lead, others cannot; some precipitate Bodies dissolv'd in salt or sharp Liquors, which others refuse to do; and some dissolve Stones, Earths, and Shells: The variety of all which operations is only owing to the difference of the pores of the Fermented or dissolved Bodies, which the Acids diversified in the configuration of their parts are not all equally disposed to reach and penetrate.

What I have said of Acids is equally applicable to Alkalies, which are divided into several different kinds; for some are quite dry, as the calcinated Alkalies, Stones, Shells, Earths, Metals, Corals, Pearls, fix'd and volatile Salts, &c. others are moist, and to speak properly are nothing else but these volatile and fix'd Sals dissolv'd in a watery Vehicle; as the Oyl of Tartar, and such like, that are made of fixed Salts *per deliquium*; the Spirit

Spirit of Wine, Hartshorn, Sal-armoniack, and such like volatil Spirits which are meerly a dissolution of their volatil Salts. Besides, some Alkalies are Salt as all the volatile and lixivious Salts; others are more compounded and immersed in heavy matter, such as Stones, Earths, Corals, &c. But in the mean while we are to remark by the bye, that all effervescencies of Liquors or compound Bodies do not always proceed from an Acid or Alkaline Salt lock'd up and imprison'd within their pores (as some would have it) but rather from their own constituent and integral parts, the disproportion and irregularity of which is sufficient for admitting greater quantities of ethereal matter, and thus advancing a Fermentation after the manner above-mention'd. Moreover, Alkalies are divided into several sorts, by the diversity of their Pores; for

as the nature of Acids consists in the length, hardness, and sharpness of their parts; so that of an Alkali in the porosity, or abundance of pores, which are of different forms, sometimes long, at other times round, or square, or triangular, or hexagonal, &c. whence arise the different *Species* of Alkalies that are variously disposed for absorbing their respective Acids; that is, such as are proportion'd to, and fit to be lodg'd within, their pores.

But while we are discoursing of Fermentation 'tis needful to observe, that sometimes, tho' very rarely, even strong Fermentations are not accompany'd with any heat, as in the Fermenting of Corals with distill'd Vinegar, where there is no heat perceiv'd, tho' the noise of their motion be pretty loud; the reason of which seems to be this, that in these two Bodies there be few or no sulphureous parts, which
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are generally the Authors of heat in any Body ; for we observe that all the Oily or Sulphureous things when Effervescencing are intensely hot, whereas those that have a lesser quantity of Sulphur, have remisser degrees of heat. Or if we choose rather to resolve the *Phænomenon* by the Cartesian Philosophy, it may be alledg'd that in the Fermentation or Dissolution of Corals in Vinegar, the motion tho' strong enough is not circular or vortical, such as is essential to heat.

Another thing worthy to be taken notice of in the Fermentations of most part of Juices, Liquors or other Bodies ; is, that after being mixed or confusedly jumbled together, and having endeavour'd a Fermentative or Effervescing Motion proceeding from the Heterogeneity and Disagreeableness of their parts, there sometimes ensues a most strict and close union
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of the parts of the Heterogeneous Bodies, without any manner of precipitation, as in the affusion of Spirit of Vitriol upon Salt of Tartar; but that which is generated of their union or mixture is saltish, and is divided into several species or kinds from the various exaltation or mixture of the several Acids and Alkalies (which are of as many different sorts themselves.) Hence Allum, Vitriol, Nitre, Sal Gem, Sea-salt, Salarmoniack, and *Tartarum Vitriolatum*, are all accounted to be of separate and distinct classes: Sometimes this Effervescency do's not produce that strict union of the mixed Bodies, but only a hiding or concealing the parts of the dissolved Body within the pores of the dissolver, without any manner of Precipitation, as in the dissolution of Gold in *Aqua Regalis*, or Mercury in *Aqua Fortis*: And in these or such like

like instances the transparency and clearness of the Liquor is not at all impair'd, by reason that the particles of the dissolved Body are so small and subtil as not to stop the passage of the Luminous Bodies. 'Tis true that if they were all joyn'd and combin'd together, their united gravity might be sufficient to cause a precipitation ; but being divided into small minute particles, and all separated from one another, their natural levity bouye them up ; and besides, not only the motion of the Liquor keeping 'em in continual agitation, but also its sharp and pointed particles that are darted into the pores of the metallick Body do keep 'em aloft, and thus prevent a precipitation. Sometimes the Effervescency of Heterogeneous Liquors or Bodies is follow'd by a precipitation ; which, tho' it be not a necessary companion of all Fermentations, yet never happens.

happens, unless either a sensible or insensible Fermentation make way for it; for the grosser parts of the mixed Bodies that cannot be easily united with the rest, are either beat down by the fermenting motion; or by their own weight do sink to the bottom; or else the particles become grosser and heavier by the mixture of contrary Bodies, as Spirit of Urine with Spirit of Wine, which after an intense Effervescency coagulate and precipitate after the same manner that most other Bodies do, when incorporated and mix'd together. But besides this precipitation which follows upon the mixture and Effervescency of contrary Liquors or Bodies; there is yet another sort, which of its own accord would never ensue upon the dissolution or fermentation of these Bodies, unless some new Liquor be pour'd upon 'em, which causes and gives rise to the

the same ; but the Liquor must not always be one and the same, for 'tis to be chang'd or varied with respect to the diverse dissolving or dissolved Bodies : Thus Oyl of Tartar, or Spirit of Salarmoniack precipitates Gold when dissolv'd in *Aqua Regalis* : Sea or Salt Water precipitates Mercury dissolv'd in Spirit of Nitre. The Oyl of Tartar precipitates Lead or Corals dissolv'd in destill'd Vinegar ; simple Water precipitates the Flowers of Sulphur, when dissolv'd in Water impregnated with the Salt of Tartar : in fine, as several Bodies require particular *Menstrua* to dissolve 'em, so when dissolv'd they require different and peculiar Liquors or Bodies, that being pour'd upon, or added to them, should cause their precipitation.

Moreover we ought to remark, that some certain Bodies dissolv'd in their proper Vehicles may be precipi-

precipitated, not only by one peculiar Liquor, but by some two, three, or four, more ; which, tho' they be not absolutely, and in all respects alike, yet they agree in an equal proportion and aptitude of parts for performing that Office.

'Tis likewise worth our observation, that Bodies dissolv'd by Alkalies are for the *most* part precipitated by Acids ; and *è contra*. But how, or by what Mechanism the pouring of certain Liquors upon certain dissolv'd Bodies should procure a precipitation, is not unanimously determin'd. Some thinking that the Liquor adds new weight to the dissolved Body, by reason of which it must needs sink downwards ; others, that the force of the affused Liquor disengages the Particles of the dissolv'd Body, which were kept aloft by the sharp parts of the dissolver or menstruum fasten'd in their pores, but very superficially, and

and thus easily separable; which hypothesis they confirm by the example of Acids, that for the most part dissolve Metals and solid Bodies; whose sharp and pointed Particles are but slightly and superficially fasten'd upon the small pieces of the dissolv'd Mettal, and thus detain 'em hovering in its own Bosom, till by the affusion of a new Liquor they fall to the bottom; that is, till the union of the dissolver and dissolved be interrupted by the force of the Liquor rushing in betwixt 'em, and blunting or rather breaking off the sharp extremities of the Acid Particles that had fasten'd themselves in the pores of the Mettal: Hence they alledge a reason why all the precipitated Bodies, especially those that are dissolv'd in Acids, do still retain a tincture of acidity, which obliges us to wash 'em frequently in order to *Edulcoration*, viz. Because they ha-

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ving the sharp extremities of the acid particles fasten'd in their pores, cannot but imbibe and derive from them, an acid or corrosive quality; which is not to be otherwise remov'd than by frequent washing in Water; for these sting-like Particles being easy to be dissolv'd in a large quantity of Water, do disperse themselves up and down the same; and, thus their force being dis-united and interrupted, cannot but be impair'd. And the like reason serves 'em to solve the phenomenon of a *Menstruum*, which tho highly Acid or Corrosive yet loses a great part of its Acidity and Corrosive Nature by the Precipitation of the dissolved Mettal, insomuch that it becomes useless and unapt for dissolving other Metals; for the edges or points of the Acid Particles being broke or made blunt by the force of the precipitating Liquor, they cannot pierce the substance of a solid Body.

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There is yet a third opinion of the precipitation of dissolv'd Bodies by the affusion of a new Liquor, viz. That it is merely owing to the freedom of their parts, they being dis-engaged of their former Fetters, while the Acid or Alkaline Particles of the *Menstruum* have a greater inclination to unite with the Body of the new Liquor, and thus are tempted to set at liberty the dissolved prisoner; and from this Hypothesis they frame reasons for explaining the vertues of precipitated Alkalies dissolv'd in Acids; and of Acids dissolv'd in Alkalies. But others choose yet a different method of unfolding the nature and disposition of the *Mensirua* that forsake the embraces of the dissolv'd Body, to joyn themselves with the Liquor that is pour'd upon 'em; which is calculated from the Laws of Motion; for that all Bodies whatsoever have a natural inclination to bend

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to that side where they find the least resistance, or where they can move with greater ease & freedom. Hence the Acid *Menstrua*, when mov'd and agitated by the afflux of an Alkaline Liquor, do abandon their metallick companions, and cover the embraces of the Alkalie; and *è contra*; For they meet with less resistance, and a more patent way, in moving towards the same. But withal I think it not improper to take notice of the action of the ethereal matter, which having once found entrance into the dissolved Body, and afterwards upon the affusion of a new Liquor meeting with a less resisting surface, and enlarged passages, rushes in, in greater abundance, and beats down the resisting Particles towards the bottom.

Having thus taken a general survey of *Fermentation* and its effects, I should next in order proceed to
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its Specifick differences that are observ'd in Minerals, Vegetables, and Animals (nay, and Meteors too) and so view the changes, alterations, generations, and Corruptions that the threefold family affords. But seeing that the nature of a Feaver, which is a Species of Fermentation, may be sufficiently gather'd and understood from what has been premis'd of Fermentation in general; and that, what is here emitted, is discours'd of at large by *Willis*, and several other Authors, who have employ'd their Pens purposely upon that Subject; I shall now confine my self to that particular *Species* of Effervescency or Fermentation, which among Physicians is denominated a *Feaver*; and which is the chief or only object of this Treatise.

And that I may convey to the Minds of my Readers some Idea or Notion of what it is, I agree with
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the wiser Physicians in defining it to be, *An Inordinate and Expansive (but permanent) Motion or Effervescency of the Circulating Humours and Mass of the Blood, which alters and accelerates the pulse beyond its natural temper, and raises an excessive heat, either in the whole Body, or in its principal parts.* But for the fuller understanding of this definition, we are to call to mind what has been said in the beginning of this Treatise, *viz.* that the Blood do's truly ferment within us, and circulate; in which twofold Motion our natural Heat and Life do's consist; and that this Fermentation is said to be convenient and agreeable to our Natures, so long as it continues moderate; that is, so long as it is fit for performing the functions which do either mediately or immediately depend upon the same; or, to express my self more clearly, so long as the constituent Elements
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of the Blood which are in themselves different and varying from one another, do by vertue of their moderate or well temper'd Heterogeneity undergo a gentle and soft commotion, by the easy and peaceable entrance of the ethereal matter; and are exactly mix'd and incorporated with one another: Which smooth, and agreeable disposition is mightily advanc'd by the circular motion of the Blood, that depends upon a lively compression of the Heart in its *Systole*, and imparts both heat and nourishment to all the Body. For it is now accounted beyond all peradventure, that the Blood, as well as other Bodies, consists of divers and varying parts, which are of different figures, and differently to be accounted of; some of 'em being Spirituous, very subtil and moveable; some Sulphureous or Biliary; some Saline both Volatile and Fix'd; some Watery or Serous,

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and in Fine, some Tartareous or Earthy; all which, as they are differently combin'd or joyn'd together, or predominant one above another, do convey different Constitutions to the Blood, and thus are the cause of the difference of Temperaments in a Natural State, and of Diseases in a Preternatural. The truth of this Plurality of differing parts in the Blood, is not only confirmed by the analysis or resolution of the Blood, which presents to our view the above-mention'd Elements or Principles; but is demonstrable from Reason and Experience; for the saltiness of the Urine, Serum, and Spittle do's certainly prove the presence of Salts in the Blood. The choler, being of a yellow sulphureous colour, which is filtrated through the substance of the Liver, and is easily inflammable in several Bodies, is an evident instance of the sulphureous

ous particles : The small Spirits that are strain'd through the Cortical part of the Cerebrum, and whose existence is acknowledg'd by all, do necessarily infer some subtile, moveable, and spirituous matter, of which they are generated : The Urine, Sweat, Tears, nay, and the very Liquidity of the Blood, do openly proclaim a Water or Phlegm in the same. And the grossness or coagulation of Blood drawn out from the Veins, nay, the very Stones that are ingender'd within our Bodies, do clearly signify that there be some terrestrious or earthly Particles in the Blood. In fine, being that whatever goes to our nourishment is a needful ingredient into the composition of our Bodies, and that we indifferently feed upon Spirituous, Sulphureous, Salish, Watery, and Terrestrious things, we have all reason to conclude that there are par-

ticles or substances within us of the same qualities. For the Food we receive cannot make any chyle, but what must partake of the like Principles as it has in it self; tho' perhaps they be not so gross; and the Blood which is made of that chyle must be of the same nature. Moreover, the chyle which continually runs into the Blood for repairing its losses, and which contains in its Bosom many different particles disagreeing with those in the Mass of the Blood; and likewise the *Lympha*, which returns again to the Blood from the Glandules, where it was separated; and which is impregnated with an Acid quality, as we see by its extinguishing of Mercury; these two, I say, are very serviceable in maintaining and preserving the Fermentation of the humours in our Body. For the Chyle that insensibly drops into the Blood in the

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subclavian Vein is not altogether homogeneous or uniform : And in that condition circulating round with the Blood thro' the Heart and the Blood Vessels do's by the irregularity and disproportion of its parts raise a Fermentation, whence it is chang'd from Chyle into Blood ; and because the Sulphureous and Balsamick parts are dissolv'd by the sharp Salt of the Blood, it loses its white milky colour, and becomes red. But the *Lympha* being stuff'd with Acid Particles is a natural Enemy to the Alkaline *Bile* that is lodg'd in the Blood, and do's as forcibly cause a Fermentation of the Blood, as the mixture of an Acid with an Alkali is known to do in other instances. And as to the Chyle's encreasing and advancing the Fermentation of the Blood, after being mix'd with the same, we need no other proof but that of the Body's becoming hotter, and the Pulse

beating faster, about two or three hours after eating ; which is the precise time that the Chyle is dropping out of the *Ductus thoracicus* into the Subclavian Vein, and diffusing it self along with the Blood through the whole body.

But the Sulphureous and Spirituous parts that are predominant in the Blood (as in all other Bodies that are liable to frequent Fermentations) are highly conducive for exalting its natural Fermentation, which arises from the mutual strife of its internal Principles, and the reciprocal Jarrs of the Heterogeneous Particles both in the Blood, Lympe, and Chyle ; for they being easily moveable, and being once put in motion by the ingress of the ethereal matter, are very active in attenuating and subtiliating the gross resisting parts, that I mention'd before, while treating of Fermentation in general. Hence we observe

observe that in a hot fiery temperament where the Blood is hot, thin and sprightly, and full of spirituous Sulphur, it is much more Fermented, than in other temperaments where Phlegm, Earth, or such like passive Principles do obtain a sovereignty over these active ones, and entangle or dilute 'em too much: As also that the exaltation of the Sulphureous parts of the Blood is generally alledg'd for the cause of all Feavers, because they are more capable to diffuse a Feaverish heat through the Body than their other fellow companions. So that a natural or healthy Fermentation is such as is moderate and equal, for the reasons above-mention'd: But a Preternatural and Sickly one is such as is either too slow pac'd and dull, which is the cause of cold distempers, obstructions, *cachexia's* or ill habit of Body, Green sickness, Melancholly, &c. or too swift and

violent, and attended with too great commotion of the Blood and its Elementary Principles, which last is justly accounted the cause of all Feavers ; so that a Feaverish Fermentation do's not differ from a Natural one, but gradually or in less and more ; and the same causes, as they are more or less intense in their actions, are equally the Authors both of a natural and preternatural Fermentation.

And for so much as our present discourse centers upon Feavers, I am now to explain apart every word of their definition : In the first place a Feaver is said to be *An inordinate and expansive Motion* ; which words serve to represent its *Genus* ; for 'tis a preternatural motion, and truly Fermentative, seeing it possesses the same very qualities that accompany the Fermentations of other Bodies. In the next place it is said to be a *Perma-*
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nent Motion ; that is, such as lasts at least for a day or two ; to distinguish it from an accelerated circulation of the Blood, that follows upon running, or such other violent Exercises as procure an intense heat and sweating over the Body : For that estuation or tumult in the Blood cannot be call'd Feaverish or Morbifick, since our Pathological Writers do unanimously agree that 'tis an essential property of a disease to be permanent and abiding in the Body, and not to pass over of a sudden. Moreover, this Feaverish Motion is such as *accelerates the pulse beyond its natural Temper, and produces a change in the same ;* which is sufficiently attested by daily Experience ; for we see that in all Feavers the Pulse is much more frequent than ordinarily ; and for the most part 'tis otherwise alter'd from what it uses to be in a natural State, becoming either higher, ful-

ler, unequal, or intermitting ; all which are only owing to the immoderate Fermentation, which alters the constitution of the Blood, attenuates and dis-engages its Particles, and renders the animal Spirits more moveable, whence ensues a quicker and more violent *Systole* of the Heart ; for the Blood and animal Spirits are the undoubted and only cause of the constriction of the Heart, and of all other muscular motion. The last words of the definition import that, *It raises an excessive heat either over the whole Body or in its principal parts* ; which generical quality is equally accommodated to Feavers of all sorts, whether they be such as procure an universal heat over the Body ; or such as only cause an excessive heat in the inward Parts or larger Vessels, but leave a sense of horreur and cold in the extream parts or habit of the Body ; as the lyperry,
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cold and trembling Feavers ; and this sense of cold is merely owing to the pricking and grating of a Salt Serum upon the Musculary Membranes : This last clause of the definition serves likewise to distinguish a Feaver from several other Constitutions of the Body in which the beating or pulse of the Arteries is accelerated, but is not feaverish ; as in the Green Sickness, Cachexia, and in the Pangs of Death ; for in such cases the Blood and Spirits being vitiated do but faintly contract the Heart, so that the space it moves in be- shorter, its pulsation returns the oftner. I shall not here stay to refute the definition which the An- cients gave of a Feaver, as being a *Preternatural Heat, originally kind- led in the Heart, and from thence diffus'd through the Arteries over the whole Body* : Since 'tis sufficient to remark that 'tis neither adequate, exact,

exact, nor clear; nay, that it rather explains the effects of a Fever, than its essential and first attributes. Besides, The Ancients were hugely mistaken in taking a Fever to be only a Disease in so far as 'twas communicated to the Heart, which they thought was the only true Living part; for they neither allotted the Blood any manner of Life, nor would they own it for a part of the Body; the falshood and absurdity of which position cannot but be obvious to the merest novices in Physick.

This our Definition if thoroughly weigh'd and well understood removes all further doubt, or suspense, of the proper and immediate subject of a Fever, which is certainly the Mass of the Blood and Humours circulating in the Blood Vessels, for that is only capable of Fermentation. Whence we are led to discover the Error of the Ancients

in determining the Preternatural Heat of an *Ephmera* or *Day-Feaver*, to be only seated in the Spirituous Parts of the Blood, as if the rest of its Mass did not partake of the change as well as they. Or as if the Solid parts could first conceive a heat of themselves, and then communicate it to the Blood and Humours; whereas all Heat, whether Natural or preternatural, depends solely upon the Circular and Fermentative Motions of the Blood.

Both ancient and modern Physicians have disagreed in giving the divisions of Feavers; some divide 'em into *Continual* and *Intermitting*; others into an *Ephmera*, *Putrid* and *Hectick*; others into not *Putrid*, *Putrid*, and *Pestilential*: But we shall not confine our selves to the method and divisions of other Authors, (which if any covet to know, he may understand from their own Writings) accounting it more pro-

per to follow the simple and plainer way in dividing 'em into *Essential* and *Symptomatical*. The *Essential* is that whose cause is originally lodg'd in the Blood, and has no dependance upon any other distemper, or affected part of the Body. The *Symptomatical* Fever, is so call'd, because 'tis only a Symptom of another distemper or disposition; and whose immediate cause is not originally plac'd in the Blood, but deriv'd from some affected part, and so communicated to the Blood. Of the first sort are the Burning, Malignant, Continual, and Intermitting Fevers; in which the Effervescency of the Blood is produc'd by a cause bred in its own bosom; and therefore are call'd *Essential*. But such Fevers as follow upon Inflammations and Ulcers of the parts, are of the second Category; for the Heterogeneous *Alia'sma's* that are confus'd with the

the circulating Blood, when repairing to it from the Ulcer, do raise the Preternatural Fermentation, so that it do's not deserve the name of an *Essential* or *Primary*, but that of a *Secondary* or *Symptomatical* Fever. An *Essential* Fever (that is, such a one as arises immediately from the indisposition of the Blood, without the mediation of any other affected part) is subdivided into a *Continual* and *Intermitting*. The *Continual* is that which from its first attacking of the Sick Person, never relents, or gives o'er, till the morbidick cause be expell'd either by sweating or some other Evacuation ; or till the Heterogeneous Particles contain'd in the Blood (that are the source of the Preternatural Fermentation) be so subdu'd and vanquish'd, that the immoderate commotion of the Blood ceases thereupon, without any fix'd or constant Period of its return.

return. But a Feaver is said to be Intermitting, when the morbidick cause do's not continually act upon the Blood ; but only by certain fits with intervals of Remission betwixt 'em ; so that sometimes the sick Person is all over feaverish, at other times perfectly free of it. And the same very effect or end (*viz.* the dispersing and subduing the Heterogeneous parts) which in a continual Feaver is compass'd by one continual, protracted Paroxysm, is brought to pass in the intermitting by several repeated Paroxysms, which for the most part observe a constant and fix'd Period of returning. A continual Feaver is sometimes putrid ; sometimes not putrid. But an Intermitting is always attended with Putrefaction. But by Putrefaction I understand (as do all the wiser Physicians) a loosening of the System of the Humours, and a separation of

of the constituent Principles of the Blood, so that its texture or frame being altogether unlock'd, or disjointed, the principal parts do fly away. A Continual Feaver is said to be not putrid, when the Feaverish Fermentation of the Humours do's not sensibly loosen the union or mixture of their principles, or infer any remarkable dissolution of the texture of the Blood; but while 'tis call'd *not putrid*, we are not to understand the words so strictly as if the Blood underwent no manner of dissolution, or suffer'd no separation of its Principles, for 'tis impossible that an immoderate Fermentation of the Mass of the Blood should not entail some change or other. These *Imputrid* Feavers are either such as last but for a day, and are call'd *Ephemera's* or *Day-feavers*; deriving the etymology of their name from a certain Animal, call'd *Ephemeron*, the length of whose

whose Life is said not to surpass that of one day; or are such as reach to the second or third day, and were known among the Ancients by the name of a *Protracted Ephemera*, or a *Synochus not Putrid*. On the other hand, a Continual Feaver is call'd *Putrid*, when the Agitation or Commotion of the Humors lodg'd in the Blood Vessels is so violent and lasting, that the Blood do's thereby suffer the loss of its chiefest parts, the dissolution of its Contexture, and the separation or divorcing of its Principles. And this Putrid Feaver is either *Acute*, which quickly runs its course and comes to an end, by reason of a great abundance of active Principles that enliven the Fermentative Motion of the Humors; or *Chronical* and Lingring, in which the Fermentation tho' Preternatural is but dull and lazy, by reason of the scarcity or deficiency

ency of Sulphureous and Spirituous Particles. Or else it is *Hæctick*; for a Hæctick Feaver is justly accounted Putrid, when 'tis become habitual, and the whole *Crafsis* of the Blood vitiated, so that 'tis not fit for nourishing the parts; whence ensue the leanness and consumption of the Body, that are the visible Consequents of a Hæctick. But in respect of the greater or lesser decay and loss of the chief Particles, or the greater or lesser dissolution of the Blood, and separation of its Principles, some Feavers are said to be simply *Putrid*, others *Malignant*, in which the dissolution of the Blood is very remarkable; and others *Pestilential*, in which the dissolution and separation is so great, that a greater cannot be. The simple Putrid Feavers, that is, such as are attended by a moderate dissolution of the Blood, were divided among the Ancients, into *Bilious*, *Phlegmatick*,

matick, Melancholick and Sanguine, from the various exaltation and predominancy of any one Humor in the Body above the rest; and in like manner some of the modern Writers divide 'em into *Bilious, Sanguine, Lymphatick, &c.* But these divisions are of little or no importance; nor ought we to believe with the Ancients that either the Choler, Phlegm or Melancholy can *Putrify* alone, and by vertue of that its peculiar *Putrefaction*, give name to the Feaver; nor with the Moderns, that only the Choler or Lympe can *Ferment*, or be the cause of Fermentation; for that work belongs rather to the whole Mass of the Blood, than to the Bile or Lympe apart; and therefore all such Feavers are more properly *Sanguine*, than *Bilious* or *Lymphatick*.

Besides the differences of *Continual Putrid Feavers* already spoken of;

of; there are several others no less worthy to be taken notice of; for some are simple, and of one even temper (which sort of Feaver in the Language of the Ancients was call'd *Acmaistica*, or *Homotonos*) when the accession is equal, and oppresses the patient always after one manner, detaining the Humors in the same degree of Putrefaction from the beginning to the ending, extending its Paroxysm to several days without any Intermision or Exasperation whatsoever.

Sometimes this simple Feaver encreases gradually, or augments its strength by a successive Putrefaction of the Humors; and is call'd *Epacmaistica* in opposition to the *Paracmaistica*, which decreases by degrees, by a gentle and intible decay of the first Putrefaction; which follows upon the subduing, dispersing, or evacuating the Heterogeneous and Fermentative

tive Particles that first gave rise to the same. Other Continual Putrid Feavers are compounded; for tho' they be continual, yet they are liable to Periodical Exasperations and Remissions, and thus seem to be compounded of a continual and intermitting joyn'd together; they are call'd either Continual Quotidians, Tertians or Quartans, as the Fits return either every day, or every other day, or third day, &c. But if several Fits return in one set day, whether second, third, or fourth, then the Feaver is yet more compounded, consisting of a simple continual and a double Tertian, or a double or treble Quartan, according to the various Correspondence of the Fits to one another. And if a Feaver be both continual and liable to Quotidian, Paroxysms, or is compounded of a simple continual Quotidian, and Intermitting; and withal have Fits every

every third day, with Paroxysms resembling those of a Tertian Fever, and Corresponding orderly to one another, then 'tis call'd a Semitertian; that is, a compound of a simple continual, a quotidian and tertian intermitting Fever; which the Ancients have made so much noise of. Having thus describ'd all the several sorts of Continual Putrid Fevers, we shall in the next place relate the divisions of the Intermitting ones. And in the first place some of 'em are orderly, and keep to their periodical turns, which are constant and determin'd to an hour; others are erratick, inconstant, and disorderly, whose paroxysms observe no order of days in their repeated accessions, nor any fix'd correspondence to one another; and if these Paroxysms do immediately succeed to one another, as if the second should begin upon the termination of the first, 'tis call'd a

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Subintrans. The intermitting orderly *Feaver* is subdivided into simple and compound: 'Tis said to be simple when it do's not return oftner than once in one day; and from the mutual distance of the days, whether the very next, third or fourth, are the divisions taken of Quotidian, Tertian, Quartan, Quintan, Sextan, &c. And not from the variety of the Humors, viz. Phlegm, Bile and Melancholly, as the Ancients would have it, who thought that the Putrefaction of the Phlegm was the cause of Quotidians, that of the Bile of Tertians, and Melancholy of Quartans; which opinion cannot but appear to be unreasonable and groundless to any considering Person; for since they allow'd but four Humors in the Body, how could they explain the Natures of Quintans, Sextans, &c. Wherefore the difference of Intermitting Feavers is rather owing

ing to the difference of their Periods than any other cause. And indeed I know no reason why the double Tertian of the Ancients which recurs every day, and their triple Quartan which observes the same Period, should not be reckon'd among the Quotidians; especially since they themselves must needs acknowledge that a *Feaver* is call'd Quotidian when the *Paroxysm* returns every day; and in like manner Tertian, Quartan, or Quintan, when it returns every third, four h, or fifth day. An Intermitt ng *Feaver* is said to be compounded, when the *Paroxysm* returns several times in one day, as if twice, thrice, &c. and as the day on which it repeats these fits is either the next, third, or fourth in order, so 'tis call'd a double or triple Quotidian, Tertian, Quartan, &c. And these are the differences of Essential *Feavers*; unto which the divisions of the Sympno-

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matical succeed to be related.

Symptomack Feavers, as well as *Essential* ones, are divided into Putrid and not Putrid: They are said to be not Putrid when the union or mixture of the Principles in the Blood is not much loosen'd or unlock'd, nor its contexture sensibly dissolv'd; such are the Feavers that are wont to attend Colick Pains, Head-aches, Tooth-aches, Disenteries, &c. in which the pain causes such a disorderly and irregular motion of the Spirits, that they contract the Heart more frequently, and thus raise a commotion in the Mass of the Blood, and awaken or stir up the Heterogeneous Particles that do always in some measure lodge in the same. In like manner they are said to be Putrid, when the Blood is more oppress'd; and the bond of its Principles sensibly unlock'd; as in the Feavers which arise from the Inflammations of several

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ral parts of the Body, or Ulcers and Impostumes : For the Putrid, Hot and Fermentative Particles which proceed from the Inflam'd or Ulcerated part are mix'd and confus'd with the Blood as it circulates through it, which they are very Contrary and Heterogeneous to, insomuch that they put it into a Fermentation, and dissolve its frame and constitution. Of the Symptomatical Feavers which are not Putrid some are *Ephemeræ's* or Day-feavers, that are not extended beyond a day or two at most, by reason that the Blood is less dispos'd for a Preternatural Fermentation. Others endure for many days, by reason of the contrary cause. But as to the Symptomatical Putrid Feavers, some are acute and short, such as the Feaver, which owe their original to Inflammations, which quickly terminate, and for the most part without any danger : Some are

long and chronical, extending to several Months, of which sort are those slow *Hectick Feavers* which accompany the Ulcers and Imposthumes of the inward parts, whose corrupted and putrified Particles are insensibly communicated to the Blood, and by a slow and gentle pace dissolve its Mass, without that sensible Effervescency or Boiling that attends other *Feavers*, by reason of a greater abundance of Heterogeneous Particles either hatch'd in the Blood, or imparted to it from elsewhere.

But to prevent all mistake, I must own that while I speak of *Symptomatick Feavers* accompanying Inflammations, I do not mean that they are always secondary, and subsequent to the Inflammation; for sometimes they are primary and essential; and in that case the Inflammation is a Symptom of them, by reason that in a violent Fermentation

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tation of the Blood, some of the Blood Vessels may be too much open'd or broken, whence ensues an Expansion or Extravalsation, or a croud of Humors repairing to the place, according to its various disposition ; and either of these cause an Inflammation. But the Sympotomical Feavers that follow and depend upon an Inflammation may undergo several considerable differences, according as the constitution of the Blood which causes the Inflammation is thinner or thicker ; with respect to which difference, some are call'd *Erysipelatodes*, others *Phlegmonodes*, &c. And such as are rais'd by an Ulcer or Impostume are justly call'd *Purulent* or *Putrify'd*, because the part of the Body Inflam'd is Corrupted and Putrify'd by a *Gangrene* or *Sphacel*, and thus communicates its *Poysonous* Particles to the Blood. These are the principal and most considerable

differences of Essential and Symptomatick Feavers; unto which other Writers add several others, tho' of less importance and more accidental, they being taken from the various symptoms and accidents that are wont to attend 'em; thus because of the burning Heat, and unquenchable Thirst that accompanies some Feavers, they are call'd *Causons* or *Burning Feavers*. Others are call'd *Lypyriæ* and *Trembling Feavers*, by reason of the cold that possesses the external parts, while a violent heat rages within. Some are call'd *Purple* or *Petechial Feavers*, from the *Exanthemata* or red spots that appear in the Skin; some *Horrisick* from the frequent horror and shivering, or the successive returns of cold and heat: Some *Swoonding Feavers*, from their frequent faintish and swoonding Fits; Some *Worm Feavers*, from the Worms that sculk in the Guts, and

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joyn forces with the Feaver ; some *Milk* Feavers from the Milk that is gather'd in the *Breasts*, which oft-times gives rise to a Feaver. Some *Catarrhal*, *Arthritick* or *Rheumatick*, from the *Catarrhs*, and other Symptoms or Diseases that attend 'em. Some *Convulsive*, *Vomiting*, *Gripping*, *Hungry*, &c. from the like Symptoms. Some *Affodes* or *Loathing*, from the uneasiness of the Stomack and vomiting. Some *sweating* or *Elodes* from the continual Sweating. And to conclude, others are call'd *Epialæ* from the frequent accession of heat and cold to one and the same part. All which are pursued at large by *Sylvius*.

Having thus related the several differences of Feavers with all possible accuracy, it remains now that we should with equal application enquire narrowly into their causes. But 'tis not to be expected that we can discourse apart of all their se-

veral *Species* or kinds, with an equal length ; for such a Treatise as that would swell big enough for a whole Volume : Our business is to explain the causes of the most principal, and remarkable, from which the causes of the others may easily be understood : And in the first place to open up this matter more clearly, 'tis to be remark'd that the opinions of the ancient and modern Writers concerning the causes of Feavers are very different ; which we shall take a view of, in order to judge, which of the two may best merit our Belief.

To begin then with an *Ephemera* or *Day fever*, which is the first Species of Feavers mention'd above, the Ancients thought it proceeded from the agitation of the Spirits in the Blood. But an *Hætick* they deriv'd from an imbred heat first augmented in the solid parts, and transmitted by them to the Blood,

as

as it passes in its Circulation.

The Modern Writers have follow'd much another method in explaining the causes of Continual, Intermitting, Putrid, and not Putrid Feavers, &c. for they have cast out of Doors the Malignant and Occult Qualities, the motion of the Stars, and the fourfold nourishing Humor: And having discover'd the circular motion of the Blood from the Arteries to the Veins through the whole Body, occasion'd by the successive constriction and relaxation of the Heart, do look upon the Blood as consisting of the above-mention'd Principles, and abounding with spirituous and active Particles, or as stuff'd with *Heterogeneous Superfluities* which are to be expell'd out of it, to be the cause of all Feavers; unto which they add some Juices lately discover'd by Anatomy, which either mediately or immediately are wont

to empty themselves into the Blood, as the Chyle, Lymphe, and Pancreatick Juice. The most noted of these Modern Writers are *Willis* and *Deleboe Sylvius* ; who have fram'd new *Hypotheses* peculiar to themselves : Of which neither the one nor the other ought to be quite rejected, nor totally imbrac'd ; for though they advance several points very likely to be true, yet they have others very improbable. As for instance, *Sylvius* asserts that the *Pancreatick* Juice stop'd in the lateral ducts of the *Pancreas* or Sweetbread, by a viscid Phlegm, do's at certain intervals break through the Phlegm, and run into the *Duodenum*, and thus causes Intermittent Fevers ; which is sufficiently disprov'd by answering that 'tis a groundless Assertion, that bears no colour or show of Truth. But as to the Bile and Lymph which he gives for the causes of Continual Fevers,

no Man of solid Learning can disallow of it ; for the Lymphe on one side abounding with Acid Particles , and the Bile on the other impregnated with a Lixivious Salt, are the two fittest Heterogeneous Bodies , either to preserve and cherish the natural Heat and Fermentation of the Blood, when in a moderate temper ; or to raise a preternatural and feaverish Fermentation, when either of 'em is exalted beyond their due proportion. In like manner Dr. *Willis*'s opinion of the cause of Continual Feavers, which he alledges to be the fierceness and rage of the Spirits and Sulphur in the Blood, is by no means to be approved of ; for tho we cannot deny that these two principles are exalted in the most part of Feavers, and by consequence being very moveable may forward the preternatural motion of the Blood ; yet it seems originally

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to be owing to the disproportion and heterogeneity of the particles of the Blood, or to the irregular and disorderly constitution of the Lymphatick Juice that is continually discharg'd by the Glandules into the Blood ; for their irregular and disproportion'd Figure renders their mixture or confusion with the Blood very difficult, and affords a free and open Door for the ingress of large quantities of ethereal matter, which agitates and puffs up the grosser particles of the Blood that stand in its way. Moreover there are some Feavers, as an inveterat *Hetick* in which the Spirits are very low ; so that it is inexplicable how by the affusion or mixture of a *Heterogeneous* Body with the Blood, or any other Liquor, the Sulphur and Spirits shoud all of a sudden rise up and endeavour to fly away, and thus create an *Effervescency* or Fermentation (as Dr.

Willis imagines.) For if their exaltation and measure was so moderate and regular as not to undergo a Fermentation before the confusion and mixture of the Heterogeneous Body, why should its arrival introduce such a sudden change? But withal 'tis certain and incontestable that (as he says) the cause of several Intermitting Feavers may be the crudity of the nutritious Juice or Chyle, occasion'd either by some defect in it self, or by the corruption of the ferment of the Stomack; and sometimes the deprav'dness of the Blood, when it degenerates from the wonted Figure and Situation of its parts, may give rise to the imperfection and crudity of the Chyle, and so cause the Feaver; for when the Chyle is in a natural disposition, and continually joyning it self to well temper'd Blood, it certainly produces a natural and friendly Fermentation

tation in the same; as is evident from the Sprightliness of the Pulse, the encrease of heat, retrieving of Strength, and the more vigorous motion of the Spirits some hours after eating: And by consequence when it swerves from its natural State, and is crude or unconcocted, or is mix'd with degenerated and depraved Blood (that is, whose Constitution is become auster, acid, or sharp; or any other way vitiated by the various Combination and Predominancy of its several Principles, or the perverse disposition of its Particles) it imparts to the Blood a higher and more seaverish Fermentation, and thus procures an intense heat over the whole Body; which (as was said already) is chiefly owing to the Heterogeneity and Disproportion of the Chyle and Blood, that affords an entry to greater measures of ethereal matter, which raises a stir and tumult-

tumultuous commotion in the insensible particles. This Supposition concerning the cause of intermitting Feavers is built upon the Doctrine of Sanguification, which consists in a dissolution of the fat and sulphureous parts of the Chyle, by the sharp and lixivious Salt of the Blood; and by raising a heat which changes its white colour into a red. For Chymical Experiments do sufficiently evince that fat and sulphureous things cannot be dissolv'd but by what is sower or sharp; and that their solution entails upon 'em a ruddish colour. Now the natural dissolution of the Chyle is done by a slow and gentle commotion of the constituent parts of the Blood, occasion'd by the mutual and agreeable proportion of the Chyle and Blood; but when they are Heterogeneous, the Motion is more violent and disorderly, for both Liquors bereav'd
of

of the due and wonted proportion and figure of their parts, cannot easily mix or combine together ; and therefore when they juttle one against another , they must needs raise an Effervescency greater than the Natural, and thwart the assimilation and commutation of the chyle into the *Blood* ; for unless there be a fit proportion betwixt the agent and patient, there shall still remain some parts of the Chyle that by reason of their crudity and grossness are not converted into *Blood*, but swim in its Mass like so many *Heterogeneous Bodies*, that while their number is small and unfrequent are so entangl'd and kept under by the *Blood* that they cannot excite the feaverish Paroxysm, till in the progress of a certain time their number be augmented sufficiently for performing that Office ; like some Liquors that do not ferment, but when mix'd in certain determin'd

min'd quantities. And these crude parts of the Chyle cannot be exalted, and assembled in a sufficient quantity, till after several digestions in the Ventricle, and conversions of Chyle into Blood: But as the first Concoction is more or less perverted, or as the Blood swerves more or less from its natural Temperament, their number and strength is sooner or later perverted, and accordingly causes either Quotidians, Tertians, or Quartans, &c.

In order therefore to establish a probable and likely *Hypothesis* of the causes of Continual and Intermitting Feavers, I think it not amiss to joyn the two suppositions of these celebrated Authors together, and make one of 'em; in admitting what *Sylvius* advances of Continual Feavers, and *Willis* of the Intermitting; but lopping off what the former asserts of the Intermitting,

termitting, and the latter of the
 Continual. This *Hypothesis* has
 been largely enough explain'd, and
 needs no other confirmation than
 that all the *Phenomena* and *Symp-*
toms that attend both Continual
 and Intermitting Feavers are more
 easily explicable by it than any
 other; for as to the continuation
 of Feavers, 'tis certain that the
Bile which at all times makes up
 a part of the Mass of the *Blood*,
 and the *Lymphe* which is conti-
 nually empty'd out of the *Glan-*
dules into it, must needs raise a
 feaverish and violent Fermentation,
 when either or both of 'em is de-
 prav'd (that is, when the *Lym-*
phe becomes more Acid than Na-
 turally it is wont to be, or the *Bile*
 more sharp and lixivious;) and
 this Fermentation cannot choose
 but be continual, by reason of the
 continual presence of its cause, *viz.*
 The mutual concurrence of the *Bile*
 and

and Lymphe; which when meek and agreeable is acknowledg'd by all Judicious Physicians to be the cause of the natural and healthy Fermentations of the *Humors*; and consequently they are justly entitled the cause of the Preternatural, when they transgress the bounds of their natural Temperaments.

In like manner the Remissions of Intermitting Feavers are plainly deducible from *Willis's* Supposition of the crude parts of the Chyle that require a set-time for their exaltation and encrease of their quantity; which set-time is variable, as the Chyle is variously deprav'd, and its conversion into Blood vitiated; and as the Blood it self is variously disturb'd and perverted in its Constitution: Just as the variety of Continual Feavers takes its rise from the various Exaltation and Depravation of the peccant Lymphe or Bile, and from the
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greater and leſſer Corruption or Putrefaction of the Blood. Moreover, this Doctrine of the Intermittent Feavers is confirm'd by many other reaſons mention'd in *Willis* ; as firſt that they are for the moſt part cur'd by faſting and abſtinance from Food ; that they are accelerated and their Paroxyſms render'd more frequent, by the Errors of Diet, and too frequent Eating ; whereas they become ſlower and their Fits more unfrequent, by a ſpare Diet, and ſhort Commons. And beſides (which is very remarkable) that their Cure is oft-times better performed by Vomiting than any other remedies : All which Conſiderations do forcibly evince that the cauſe of theſe Feavers muſt be ſeated in the chamber of the firſt concoction, and can be no other than the nutritive juice.

But when we agree with *Sylvius* in deducing Continual Feavers from
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the concourse of the lymphe and bile, which being Heterogeneous when incorporated with the Blood are the fittest Principles for raising a Fermentative Motion, we only understand it of the Continual Feavers that are *Essential*, and Originally Rise from the Blood; for the Symptomatick Feavers that attend Inflammations or Ulcers, have evident enough causes of their own, which are the *Miasms* or corrupted Particles that are convey'd to the Blood as it circulates through the Inflam'd or Ulcerated Part; and being Heterogeneous and for the most part endow'd with a violent motion, dispose the Blood for undergoing a preternatural Fermentation.

Having premis'd so much of Continual and Intermittent Feavers in General, we come in the next place to treat of their numerous progeny; of particular Feavers; and to examine if their Symptoms accord with the

the alledg'd *Hypothesis*. And to begin with the Simple Continuals, An *Ephmera* or Day-feaver seems to take its rise from the Bile, sharpen'd and exalted a little above its natural State, by several *Procatartick* Causes, such as the heat of the Sun, drinking of Wine, Labour, &c. which cannot raise any lasting or violent Fermentation, but being mix'd with the Lymphe may produce a short and easy commotion in the Blood, but cannot entail upon it any great Putridity, or Dissolution of its constituent Principles.

In *Putrid* Feavers both the Bile and Lymphe are much more deprav'd than in an *Ephmera*, the measure and degree of their exaltation being much greater, so that a greater and longer Fermentation of the Humors must needs ensue, which dissolves the band of its Principles, and causes a Putrefaction in the whole Mass of the Blood. A

A slow lingering Feaver proceeds from the same causes when more unactive and dull ; and besides, from the Blood exhausted of its Spirits and Volatile Sulphur ; for 'tis by reason of their deficiency that the Effervescency (tho' preternatural) is so remiss and faint.

An Essential Hectick differs little or nothing from the last mention'd, and therefore is generated by the same cause : But a Symptomatical Hectick that accompanies internal Ulcers, proceeds from the putrified Heterogeneous Particles that are continually transmitted from them to the Mass of the Blood ; but being not very numerous, create but a gentle and soft Effervescency.

A *Malignant* Feaver proceeds from the sharpest and most lixivious Bile, or from some sharp corpuscles imbibed from the Air, or receiv'd by infection, and convey'd to the Blood, in which they exalt

exalt and sower or sharpen the Bile, so that the Blood is sensibly dissolv'd and totally corrupted, whence ensue thole grievous Symptoms, that are peculiar and appropriated to this kind of Feavers.

The *Pestilential* is a degree higher than a Malignant, proceeding from the same Causes, but more intense, and consequently is attended by the like but more dangerous Symptoms.

A *Cansor* or Burning Feaver is owing to the oily and sharp Constitution of the Bile, which enclines it to a violent Effervescency with a Viscid and Acid Lympe; whence proceed the burning Heat and unquenchable Thirst; for the Particles of the Blood being grosser, and being once stir'd up to a Feaverish motion, must of necessity make a deeper Impression, and create a more intense Heat.

A *Lipery* derives its Original from an oily and sharp bile, joyn'd to an *Acid* but thin lympe; whence it comes to pass that while an intense Fermentation is caus'd in the greater Vessels, the Capillary extremities or habit of the Body are possess'd with a sense of cold, by reason of the tickling and nipping of the Acid and thin lympe, that because of its thinness fly's out, and repairs to the Membraneous parts, *viz.* The fleshy skin, or the common Membrane of the Muscles; and causes the effect above mention'd. But if a *Lipery* be Symptomatical, or such a one as follows the inflammations of the Ventricle, Middrif, and Breast, 'tis to be ascrib'd to these corrupted particles that issue from the inflamed part, and are communicated to the blood to which they are Heterogeneous, whence ensues a leaverish Fermentation in the larger Vessels, and centring about the internal

ternal parts affected, while the external are not so much oppressed with heat, either because they are distant from the Seat of Inflammation, or because the Motion of the Humors is remissier than in other cases; or an Acidity prevails in the Lympe; or else because the Inflammation being internal is likewise Communicated to the Heart, so that its constriction or Systole not being duely or regularly perform'd, the Blood is not diffus'd through the external parts so as to heat them.

The Causes of the *Epiala*, and *Horrick*, are much of the same Nature; but with this peculiar difference that in them the Acid Lympe prevails o're the Oyly sharp Choler, so that when the Blood circulates round the parts, the Continual or Frequent Separation of the Acid Lympe, occasions either a mix'd sense of cold and Heat, or Frequent Shiverings.

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The *Eloides* or Sweating Feaver is caus'd by the choler when it is more sharp than oily; by vertue of which the Blood abounds with Serosities, that are Evacuated thro' the Glandules of the Skin, being separated by the feaverish heat.

The *Worm*-feaver comes from the putrid Miasms that proceed from the Guts, where the Worms are engendred, and thence conveyed to the Blood through the *vasa lactea*, or Milky Vessels.

The *Swoonding* Feaver is produc'd by the same cause as the Malignant; for the Blood being totally deprav'd and corrupted, cannot afford such elastick matter as the heart requires, nor furnish the brain with matter fit to beget Spirits.

Thus may we easily deduce the causes of all the other particular simple Feavers, whose differences tho' not very remarkable are only

taken from the various accidents and symptoms that are wont to attend them, such as Vomiting, Raving, Convulsions, and all others that may ensue upon the Translocation of the Morbifick matter into the Ventricle, Head and Muscles, by reason of the Corruption of the Choler or Lymphe ; or (which is most of all to be taken notice of in all kinds of Feaver) from the various temperament and disposition of the Blood, arising from the different union and exaltation of its Principles, which may be diversified so as to produce many different sorts of Feavers.

As to the Intermitting Feavers which with *Willis* we have ascrib'd to the depravation of the Nutritive Juice and the Blood, the difference of the Quotidan, Tertian, Quartan (both simple and triple) Erratick and *Subintrans* is merely accidental. For all Intermitrents of what

what nature soever are but one sort or species of Feavers; arising from the greater or lesser corruption of the Chyle or Blood, in which sometimes a lixivious Choler; sometimes an Acid Lymphe; sometimes both together, are exalted, or one Principle whether active or passive obtains a predominancy over the other: All which are much Influenc'd by the quicker or slower, the frequent or unfrequent approach of plentiful or scanty quantities of such Particles of the Chyle as are not subdued by the Blood, but stand out like Heterogeneous Bodies, gathering more force by the accession of fresh recruits; and by reason of the variety both of quantity and quality in these Particles, do cause an Irregularity in the Paroxysms, which are sometimes shorter, sometimes longer; sometimes return very speedily, and sometimes observe larger Intervals. And

are sometimes Anticipated, sometimes Retarded by the different use of the six non natural things. But withal it may guess'd that in the Quartans, Quintans, and Sextans, the Morbifick Cause or Feaverish Ferment is grosser, duller, and more entangled ; whereas it is more active, thin, and disengaged in the Quotidians, Tertians, and all such Feavers as have frequent and short Paroxysms : Or, to express my self more clearly, that an Acid Lympe which imparts to the Blood an acid or austere disposition, is peccant, and predominant, in all such Intermitting Feavers as have unfrequent Paroxysms that return not before the fourth, fifth, or sixth day : But that a sharp and exalted Choler reigns in those whose Paroxysms recurr frequently. Which Supposition is confirm'd by Experience, for we see that those who are of a Melancholick Temperament, whose Blood

Blood is Acid, Gross, or Austere, are more liable to Quartans and Quintans, than those of a Choleric Sharp Disposition, who are more apt to be troubled with Quotidians, Tertians, or Feavers that have frequent and short Fits: besides, the slowness and inactivity of the Ferment in Quartan, and Quintan Feavers, more than in the Quotidian and Tertians, is sufficiently evidenc'd by the duration of the Paroxysms which in the former exceeds that of the latter; for the gross resisting Blood, and their dull unactive ferment require longer time for compassing the end of the Feaver.

But While we are discoursing of the Paroxysms of Intermitting Feavers; 'tis worth our while to observe, that they do not only differ in their number, frequency, and period of returning; but in the quality of the Humor to be expell'd;

for sometimes, after both the cold and hot Fit there follows no sweat ; sometimes the heat and sweat take both place, tho' not usher'd in with a sense of cold ; sometimes the cold is very moderate and short-liv'd, when the heat is lasting and violent, and *è contra*. But for the most part, when the Feaver is form'd, the sense of cold siezes the patient first, then the heat, and afterwards a sweating. The cold proceeds from the particles of the Chyle, that are not assimilated to the Blood, but are very Acid, and being Accumulated in it circulate along with it through the membranous parts of the Body, and the common musculary membrane, where being agitated by the growing Turgesency of the Blood, they fix themselves like so many wedges : And from the sower, sharp or acid Particles of the Blood, that according to its various disposition desert the

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the rest of its Mass at the extremities of the Capillary Vessels, by vertue of the beginning Effervescency, and there stimulate or veltigate the sensible parts, causing a sense of cold, which either continues or ceases, or is interrupted, as the parts of the Chyle are either free or engaged ; or variously dispos'd in their quantity or inequality, or as the Blood it self is variously temper'd. The Heat that succeeds to the Cold is owing to an extraordinary violent agitation of the constituent particles of the Blood, which necessarily diffuses a heat over all the parts of the body ; for tho' Experience proves that there may be fermentative motions without heat, as in the dissolution of Corals ; yet that can never come to pass in the fermentation of a sulphureous fat Liquor, such as the Blood : Or, as we have already remark'd in the beginning of this

Treatise, the heat may proceed from the prevalency of the Choler above the Lymphe; in like manner as the cold was said to arise from the predominancy of the Crude and Acid Particles of the Blood or Chyle above the sulphureous bilious parts. The sweating likewise is caus'd by the commotion of the parts of the Blood, which facilitates the separation of the *Serum* in the Glandules under the Skin (its proper receptacles) as is evident by the influence of the heat of Summer, and violent Exercises; and also by the quality of the Blood which being melted and dissolv'd by the internal Effervescency is better dispos'd for the dismissal of its Serum, which finds an easy and patent egress, by reason that the pores of the Skin are dilated and enlarged by the heat. This sweat puts an end to the Paroxysm, by reason that the Crude Heterogeneous

geneous Particles of the Chyle are subdu'd and reduc'd into order by the agitation and commotion of the Blood ; and thus the whole Mass of the Blood acquires a new Configuration and Disposition of parts ; and so prevents the irregular and immoderate entrance of the subtile matter which was wont to disturb it : Or else because these Heterogeneous Particles are precipitated and convey'd to their proper receptacles ; which being separated from the Blood, the feaverish motion must needs cease. But this sweat as well as the cold and heat, that make way for it, is very differently Circumstantiated ; sometimes when the Blood is less dissolv'd, or the visciditv of the Lympe hinders the separation of the Serous humor , there ensues no sweat at all : At least, it is of longer or shorter duration, and more or less copious, as the causes which
make

make way for it, are more intense or remiss, and more active or dull in exerting their strength. What has been said of sweating is equally applicable to the cold and heat which are either quite absent, or alter'd in length and shortness of duration, as their above-mention'd causes are more or less exalted.

Having now in some measure explain'd the Causes of simple continual and intermitting Feavers, it were seasonable in the next place to proceed to the causes of Compound Feavers; but, as we observ'd above, Compound Feavers (that is such as are continual and withal have remission and periodical Fits) are a mixture of Continual and Intermitting ones; and therefore we choose rather to supersede the relation of their causes, which are no other than the Bile and Lymphe vitiated on one side, inducing

inducing the Heterogeneity into the Mass of the Blood, that causes the continuation of the Fever ; on the other side the Nutritive Juice degenerated and deprav'd, or Heterogeneous and disproportion'd to the Blood into which it runs ; whose crude and unconcocted Particles are after a certain prefix'd measure of time accumulated and heap'd up in the Mass of the Blood, so as to cause a feverish Paroxysm, which is of shorter or longer duration, and returns sooner or later, or is accompany'd with grievous or meek Symptoms, as the Heterogeneity in the Blood is greater or lesser, as the Chyle is more or less deprav'd, and as the accumulation and exaltation of its crude particles is quickly or slowly perform'd. In a word, seeing that the causes of their Continuation, and also those of their Intermission, may be variously exalted or depress'd ;

prefs'd; when apart ; much more must their combination or complication be infinitely variable, whence ensue the infinite numbers and kinds of compound Feavers. The various Symptoms that are wont to attend both Simple, Continual, Intermitting and Compound Feavers, such as Vomiting, Loosness, Watchings, Head-aches, Phrensies, Difficulty of Breathing, Thirst, Convulsions, Convulsive Motions, &c. I purposely omit ; by reason that this little Treatise which is design'd for an *Epitome* is too narrow for such bulky digressions, and (which weighs more with me) that they are all explain'd and deduc'd from their natural causes, in the descriptions of the other diseases which they are wont to accompany.

As to the *Diagnosis* or Signs of Feavers ; a Fever in general may be easily known by the Signs mention'd in its definition ; by the
heat

heat which the Effervescency of the Blood, and violent motion of its Particles diffuses in the Body ; by the acceleration of the pulse occasion'd by the frequent contraction of the Heart, for the animal Spirits are render'd more moveable and active by the feaverish heat, & so more dispos'd for the frequent contraction : And the Blood having its Principles exalted by the heat furnishes the Elastick and Explosive matter for accelerating the Heart's motion, more readily and copiously than at other times. If the pulse at any time be weak or low, it proceeds from a lesser contraction of the Heart, which do's not expel the Blood totally into the arteries, by reason of the deficiency or dissipation of the Spirits, or else the deprav'dness of the Blood that cannot afford the necessary *Copula* or cement to its parts. But if the Elastick parts of the Blood be

not

not deprav'd nor consum'd, and the Spirits neither exhausted nor their motion empair'd, then is the pulse full, strong, and high. And hence we may observe that in the beginning of *almost* all Feavers, the pulse is strong and full, but as the disease advances becomes small and weak ; I said, *almost*, because it may sometimes happen that the Blood tho' highly Putrified and Corrupted may abound in the Body and distend the Arteries and Veins when it conceives an Effervescency, and therefore requires more room ; and consequently may induce a low and weak pulse, by reason that when 'tis receiv'd into the Ventricles of the heart, the contraction of the heart cannot deposite it all into the Vessels, the Blood that came first out being sufficient to fill 'em ; so that there remains some share of it in the Cavities of the Heart, that resists and lessens.

lessens the contractive motion ; which causes a lesser elevation of the Arteries ; and in this case, the low-ness of pulse signifies only an oppres-sion of the strength, not a total decay which proceeds from deficiency of Spirits and the poverty of the Blood.

The Signs of the *Essential*, *Symp-tomatical*, *Simple*, *Continual*, *Inter-mitting* and *Compound* Feavers may easily be gather'd from what we have said of 'em in recounting their general divisions. But a Continual not Putrid, or a simple and extended *Ephamera* or *Synochus* may be dis-tinguishi'd from the rest by the measure of its duration which is but for a day or two, and by the presence of the *Procatartick* Cau-ses that for most part give it a being ; Secondly, from the meekness and moderation of the Heat, and remissness of the Symptoms ; and thirdly, by this quality, that it admits no Exasperation, begins with little

or no shivering, and is for the most part terminated by a gentle Sweat.

A *Continual Putrid* may be known by the duration which extends to several days, and sometimes weeks ; by the sharp and violent heat that proceeds from the greater Agitation and Effervescency of the Particles of the Blood, which unlocks the bands of its Principles ; and lastly by the Shivering with which it begins, and the other grievous Symptoms, such as Nauseousness, Vomiting, Head-aches, Phrensies, Immoderate Watchings, Blackness and Dryness of the Tongue, and an Unquenchable Thirst, &c. An *Acute Continual* is known by the severity and number of its Symptoms, the height of its Heat, the shorter duration of the Fever, and by the Pulse which is strong, but withal quick. A *Chronical* or *Hectic* (for these two are much allied to one another)
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is known by the length of the Feaver, which reaches sometimes to some Months; Secondly by the gradual and successive encrease of the Symptoms; Thirdly by the remissness of the heat, which is augmented some hours after eating, by reason of the concourse of the Chyle with the Blood; Fourthly by the weakness and lowness of the Pulse; and lastly by a Consumption and Decay that gradually creep in upon the whole Body. The Signs of a *Malignant* Feaver are, a sensible dissolution in the Blood when let forth from the Veins; fluxes of blood that cannot be stopp'd; pustles and spots breaking out in the Skin, frequent syncope's or swoondings, the body less hot, a stubborn and consuming Loosness, Vomitings, *Hickups*, *Convulsions*, *Delirium's*, and a weak small Pulse. A *Pestilential* is known by the Contagion, the frequent

quent numbers of Sick People, and their frequent Death; by Buboes, Carbuncles, and the many other grievous Symptoms that usually attend it; it is likewise known by its being Epidemical, or arising from a common cause, such as bad Food or corrupted Air. The lesser differences of Continual Putrid Feavers may be easily understood from what has been said already, and from the respective Diseases and Symptoms they are joyn'd with.

The Compound Feavers, such as a Continual Quotidian, Continual Quartan, Semitertian, &c. are known by the Continuation attended with periodical Fits.

The signs of Intermitting Feavers are not only a shivering, heat and sweating mutually succeeding one another, but also the *Apyrexia* or absence of the Feaver after the Fit is over. We may discern by the

the regular or irregular returning of the Fits if the Feaver be orderly or disorderly ; and by the set period for the return whether it be a Quotidian, Tertian, Quartan or Quintan ; and from their return ofner than once every day, or next day, or third day, may we judge if it be a double or treble Tertian, or Quartan ; for, as we have said already, Intermitting Feavers are denominated from the time and manner of the Paroxysm's return. The *Symptomatical* that is not originally seated in the Blood, but is an *Appendix* or Consequent of another Disease, is so easie to be known that it needs no Signs ; and its particular differences may sufficiently appear from the presence of an Inflammation, Erysipelas, Imposthume, Ulcer, Gangrene, &c.

The *Prognosis* or Judgment of Feavers is as various as their species

cies or kinds are. The *Ephemera* is the least dangerous of 'em all, by reason of the lesser Putrefaction of the Humors that it signifies. The Putrid is much more dangerous, and is to be more or less suspected, with respect to the greatness and number of the Symptoms. A Hectick and Slow Feaver if they be Essential are Curable in the beginning ; but when they become habitual & confirm'd, or when they are *Symptomatical* depending upon Ulcers of the Internal parts, they fall not within the Verge of a Cure. An Acute Feaver, a Burning Feaver, Swooning, Sweating, Lipyry and Convulsive, do always bode an ill event. A Milk Feaver, Arthritick, Rheumatick, Worm and Catarrhous Feavers, are not accounted so dangerous. But the Malignant, Purple, and Pestilential are dangerous above all, by reason of the extream

Putre-

Putrefaction of the Humors and Dissolution of the Blood. A Simple Continual that admits of no encrease or new accession, tho' it be not free'd from all danger, is much less to be fear'd than a Compound that besides its continuation is lyable to Exasperations. A Symptomatical fore-speaks good or evil, as the disease upon which it depends is more or less grievous; hence we always suspect such as flow from an Inflammation of the internal or noble parts. Whereas such such as flow from the external, as simple Buboes, Erysipelas, or Roses, &c. are better accounted of. In fine all Acute and Putrid Feavers are to esteem'd more or less dangerous according to their greater or lesser train of ill Symptoms, and the more or less favourable age, temperament, and strength of the patient. But if a Feaver be not Continual but Intermittig, then

for

for the most part it is free of all danger : Therefore say's *Hippocrates*, *Febres quocunque modo intermiserint periculo vacant*. I said, For the most part ; by reason that, if the Constitution of the Air or the Food be deprav'd, and by communicating its Corruption to the Blood become the cause of a popular Feaver ; or if the Feaver invade a *Cacochymical* Body so as to endure long, or to suffer frequent Relapses ; in these cases, I say, there is good ground for fear, and a small prospect of recovery. The *Quartan* and *Autumnal* are of longer duration than the *Estival* and *Tertian* by reason of the gross, stubborn and incorrigible Nature of the *Morbifick Cause*, and the *Acid Disposition* of the Blood, that prevails in the Autumn ; whereas in the Summer the Pores being dilated by the heat, the Humors are attenuated, and easily dispers'd

or

or evacuated. The *Subintrant* or *Erratick* Feavers are more dangerous than the Regular; as are all those that have longer *Paroxysms* than such as have but short ones. In the *Paroxysms* of all Feavers sweating is good, for after Fermentation the *Heterogeneous Particles* are separated that way from the Blood; nay, the frequent observation of Physicians attests that in all sorts of Feaver sweating (provided it be not a cold sweat, nor too copious, nor attended with a loss or want of strength) is always good; insomuch that all Feavers do generally terminate by Sweating. The Compound Intermitting Feavers; that is, the double or triple Tertian or Quartan; and all whose Fits are attended with grievous Symptoms, as a *Delirium*, *Weak-Pulse*, Thirst, Shortness of Breath, Vomiting, Head-ach, &c. are much more to be suspected than the

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Simple

Simple and such as bring on lighter Symptoms.

As to the Cure of Feavers, the scanty limits of this Treatise do not allow me more room than what may scarce serve for a compendious description of the Cure of their more general *Species*. Continual Feavers, especially the Acute and Malignant require frequent Venesection, which is to be repeated as often as the height of the Distemper and strength of the Patient require, and that either in the Arm or Leg as the various indications are : Also Refrigerating and Acid Medicaments ; which serve to moderate the heat of the Blood ; such as all the cooling Herbs, Roots, Seeds, and destill'd Waters, all the Acid Spirits and Juices mention'd by us elsewhere, of which may be made Broaths, Juleps, Emulsions, &c. The Refrigerating and Purg-
ing Clysters are very convenient,
and

and purging Draughts given at seasonable times, which are made of cooling Decoctions, with the addition of Tamarinds, Senna, Cassia, Manna, the Solutive Syrup of Roses, and Powder of the Roots of Jalap, if strong purgation be requisite. An *Ephemera* and not *Putrid* either terminates of its own accord, or is cur'd by one or two Venesections, and the short use of some other simple remedy.

But a *Putrid*, whether *Intermitting* or not, requires greater store of Medicines, and a longer usage of 'em. And 'tis to be remark'd that in this and all other kinds of Feavers the variety of the Symptoms occasions great variety of Prescriptions. For when they are attended by frequent Watchings, *Deliriums*, Convulsions, or *Phrensis*, we presently give Narcoticks, and let

Blood from the *Saphena* : If by Vomiting, we first take care to evacuate the deprav'd Humors that caus'd 'em, and then prescribe *Laudanum*, or the Acid Remedies that are fit for putting a stop to Vomiting. If a Loosness, especially if Symptomatical, Colliquative, or Inveterate, we first give Anodynous Clysters, then Detergents, and last of all Astringents. If the Humor be translated to the head, and produce a Sleepy Distemper, we first let Blood in the Ankle, and then administer *Vinum Emeticum*, provided the strength of the patient be sufficient to bear it. If there appear any obstruction in the Bowels, and distention of the *Hypochondria* or lateral parts of the Belly ; Clysters are frequently to be Administred, and withal such as Purge Violently, together with Emollient Fomentations. The like variety is

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to be seen in all other Symptoms.

A Burning Feaver, by reason of its intense heat, requires more frequent and copious bleeding, and larger quantities of cooling and acid Remedies, besides the universal Remedies that are equally necessary in all Feavers.

A Syncopal or Swooning Feaver calls for Spirituous and Strengthening Remedies, but in moderate quantities, lest the Feaver be more exalted.

An *Elodes* or Sweating Feaver is cur'd by such Cooling and Acid Remedies as hinder the Dissolution and Colliquation of the Blood.

A Malignant, Purple, and Pestilential Feaver (which are all near a-kin to one another, and consist in an extream Dissolution and Corruption of the Blood) do certainly require bleeding, whatever the Ancients may say to the contrary, who falsely Imagin'd that

Blood-letting drew the Malignity or Poyson from the habit of the Body to the Center; and who were wont to Administer *Alexipharmaca* or Cordial Remedies which serv'd only to augment the Dissolution of the Blood; instead of which we choose rather to give Cooling and Acid Medicines, which correct the said Dissolution; tho' in the mean while the Universal, General, Remedies ought not to be neglected

All the other Symptomatical Feavers, such as the Rheumatick, Dysenterick, Catarrhus, Worm-feavers, and all that proceed from Inflammations, together with the Slow-feavers that follow upon Ulcers of the internal parts, require no other method of Cure than what has been already mention'd in the Descriptions of Rheumatisms, Loofnesses, Catarrhs, Worms, Pleuresies, Gouts, Inflammations of the Liver
or

or Ventricle, Consumptions, and Internal Ulcers.

Hectick Slow Feavers, while they are Essential, are only Curable by Alterative and Moist Remedies; so that neither letting of Blood, nor violent Purgations can take place in it; but Clysters, and Gentle Purgers are very convenient. Bathing in sweet Water is very good, tho' in all other Feavers, especially Continual and Acute ones, it be highly Pernicious, because it stops the Transpiration and stifles the Steams, and thus increases the Feaverish Heat. Whey, Cows and Asses Milk are very good if moderately us'd; but large quantities of 'em are hard to be digested. Strengthening and Restorative Food is very useful, such as strong Broaths, Gellyes, and Nourishing Meats, with the addition of Spirituous and Volatile Remedies, but in very small Doses. If

the Slow-feaver be encourag'd or cherish'd by any obstruction in the Bowels which hinders a due separation of the Recrements from the Blood, then unto the above mention'd Remedies we ought to add the temperate Aperients, and withal forget not to use Emollient Fomentations.

As to the *Epialæ*, *Lipyriæ*, Horrifick, or such like Feavers as are attended by Shiverings, Horrour, or sense of cold; for so much as a certain measure of Acidity prevails in them; after having let Blood in a sufficient quantity and premis'd the other General Remedies, it shall not be improper to administer *Diaphoreticks*, especially such of 'em as are of thin and subtil parts, for the other sorts of Sudorificks raise but a small commotion in the Blood, which we ought sometimes to augment when the Fermentation is Lauguid, or when
 Blood

Blood has been frequently let. Nay, there are many Physicians who think that since Feavers do naturally terminate in sweating, *Diaphoreticks* of all sorts must needs be convenient in all sorts of Feavers, because that *Quo natura ducit, eo ducendum*. But tho' Sudorifick or Sweating Medicines may be suspected in Acute Feavers, because they exalt the Fermentation of the Humors, which is high enough of it self; yet when they are prudently and judiciously Administred they contribute much to the Evacuation of the Morbifick Cause; for by raising a sweat they extract and disengage the Salts that are dissolv'd in the Serum of the Blood, which make up a great part if not the whole of the Morbifick Cause. But we ought to take strict notice that the Effervescency of the Humors be not very violent, and that the Vessels be unloaded by letting Blood.

Blood, before we give 'em ; and hence the most Celebrated Practitioners observe this method of Administring Sudorificks, as the Powder of Vipers, and the like, in the Measles, Small-Pox, Purple, Petechial, and Malignant Feavers, in which Nature endeavours to throw out the Heterogeneous Particles upon the skin or habit of the Body ; tho' in the mean time they are sensible of the Poverty and Dissolution of the Blood, and that these Medicaments tend to augment its Dissolution. For they consider that all that disadvantage is more than recompenc'd by the benefit it do's to Nature, in assisting it to expel the Heterogeneous Particles, and thus retrieving to the Blood its Ancient and Natural *Diathesis*.

Besides what has been said of the Cure of Feavers, the following directions are to be carefully observ'd ; first that in a Malignant Feaver, when

when the Blood is altogether dissolv'd we ought not to use Scarified Cupping-glasses, lest the Blood becoming all over fluid should repair to the Scarified place with so mighty a current, as would not be easily stop'd ; secondly, that the more Acute the Feaver be, the more slender and thin must be their Diet. Thirdly, that Bleeding is only seasonable in the beginning while the Effervescency is yet Vigorous ; but Purgation, when the Feaver declines, and the Fermentation abates. Fourthly, that when the Pulse is weak, or low, or intermitting, *Diaphoretick* and Cordial Remedies are more proper than *Narcoticks*. And lastly, that the frequent use of sometimes Cooling, sometimes Purging Clysters is very convenient in all sorts of Feavers, for they insensibly evacuate the greatest quantity of the morbidick matter, and cleanse the first ways that furnish the Blood with deprav'd Humors. It

It remains now that we should conclude this Treatise with the Cure of Intermittent Fevers, which tho' it be not exactly the same with that of the Continual, vary's not much from it ; for the same is the cause of both, and differs only in its greater or lesser abundance or exaltation. And in the first place, as to the general Remedies ; Venesection if frequently repeated do's more harm than good ; tho' in the mean time a Physician that weighs with judgment the Temperament, Age and Constitution of the patient may venture in some cases to Prescribe the Repetition of it. Purgatives seem more proper for cleansing the first ways, that are always faulty ; for severing the heterogeneous parts from the Blood, and correcting its perverse Constitution. But Strong Emeticks, if the strength will allow, are more profitable in the beginning than Purgatives. Purgings
Clysters

Clysters are to be frequently Administred both in Intermitting and Continual Feavers. Alteratives are more effectual than the Evacuating Remedies, especially those of 'em that are bitter, and therefore call'd *Febrifuga*, such as Wormwood, Germanander, and lesser Centaury boil'd in Water; also their Salts, and all Volatile, Fix'd and Sudorifick Medicaments. The Powder of *Kinkina* or its infusion in Water or White-wine is a celebrated Remedy; a Dram or two of *Triacle* given in the Decoction of Succory is very successful. Fasting and abstaining from food is much commended. The following Ptisan is exceeding good. Take of the Leaves of *Senna* 3 β . *Centaury the lesser.* $\mathfrak{p}$ ij. Salt of *Wormwood* 3 i β . boil them in Spring-water $\mathfrak{l}$ i. of which the patient may take two or three Ounces every Morning; and in the very heat of the Paroxysm. All these and many other

other Remedies for brevity's sake here omitted are call'd *Specifick* or *Febrifuga*, because they containing within them a Saline Sulphur, or Lixivious Salt, are fittest for correcting the Acidity of the Lympe, and Redundancy of Crude Chylous Particles in the Blood; or for removing the Heterogeneity of Parts that opens a door to the ethereal matter, which causes the agitation or commotion of the Blood. But in the mean time, for so much as in all Intermitting Feavers the first concoction is vitiated, it shall not be amiss after the administering of Vomits, to prescribe strengthening and digesting remedies; and if any other Symptoms accompany the Feavers, such as Immoderate Watchings, *Delirium's*, Vomiting, Sleepy Distempers, &c. they are to be remov'd by their proper and peculiar Remedies mention'd in their proper places; but with this caution, that all cooling

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ing and acid things are to be shun'd, because they augment the Feaver. But if an Intermitting Feaver be cherish'd by an obstruction in the Bowels, we ought to mix aperients with the above-mention'd Remedies; which method is for the most part attended with success.

I supersede any further description of Intermitting Feavers, having already compass'd my design, which was to give a general scheme of all Feavers, and their proper cures; and therefore shall purposely omit that long train of Specifick Medicines that other Authors have stuff'd their Books with.

As to the Continual compounded Feavers, which besides their continuation are subject to Fits; Practitioners are wont to cure them by the same Remedies as are prescrib'd in simple Continual Feavers, unto which they add the Powder of *Kin-kina* given in *Succory* or *Poppy* Water;

ter ; and with very good success.

N. B. 1. that 3 ij. of the Powder of *Kinkina* maybe administred in *Succory* or *Purslain* Water in Continual Feavers ; but in the Intermitting, in White-wine ; about two or three hours before the accession of the Paroxysm.

2. That if the patient be weak or tender we ought to attempt nothing during the Paroxysm ; but in robust, strong Constitutions letting Blood and Purging may not be amiss.

3. That in Intermitting Feavers we give 3 ij. of Powder of *Kinkina* the first day, the next Morning 3 j. and as much at night, for the more effectual fixation of the Morbifick Cause.

4. That Attenuating Volatile Sudorificks are most proper in Quartans and Quintans, whose Paroxysms are longer and more unfrequent.

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